

REMARKS**Summary of the Office Action**

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Mizuno et al. (U.S. Pub. No. 2001/0008422) (hereinafter “Mizuno”).

Claims 1-3 stand provisionally rejected under the judicially created doctrine of non statutory obviousness-type double patenting as being unpatentable over claims 1-4 of co-pending application no. 10/539,068 (U.S. Pub. No. 2006/0227229).

Summary of the Response to the Office Action

Applicants have amended independent claim 1 by adding features of previous claim 3 to independent claim 1. Accordingly, claim 3 has been canceled without prejudice or disclaimer. In addition, independent claim 1 has been newly-amended to also include new features that differently describe embodiments of the disclosure of the instant application. Accordingly, claims 1 and 2 remain currently pending and under consideration.

Double Patenting Rejection

Claims 1-3 stand provisionally rejected under the judicially created doctrine of non statutory obviousness-type double patenting as being unpatentable over claims 1-4 of co-pending application no. 10/539,068 (U.S. Pub. No. 2006/0227229). While Applicants do not necessarily concede to these rejections, Applicants submit a Terminal Disclaimer to facilitate allowance of the present application, thereby obviating the double patenting rejections. Accordingly, Applicants request that the double patenting rejections be withdrawn.

Rejections under 35 U.S.C. §§ 102(b)

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Mizuno. Applicants have amended independent claim 1 by adding features of previous claim 3 to independent claim 1. Accordingly, claim 3 has been canceled without prejudice or disclaimer. In addition, independent claim 1 has been newly-amended to also include new features that differently describe embodiments of the disclosure of the instant application with regard to features shown in Fig. 2 of the instant application. These newly-added features are described, for example, in paragraphs [0016] – [0017] of the specification with regard to Fig. 2 of the instant application. To the extent that these rejections might be deemed to still apply to the claims as newly-amended, the rejections are respectfully traversed for at least the following reasons.

Newly-amended independent claim 1 of the instant application describes an advantageous combination of features of a photodetector that includes the following three characteristics (a) to (c):

(a) The photodetector includes:

$(M \times N)$ integrating circuits, one of each being provided in correspondence to K photodiodes $PD_{k,m,n}$ ($k=1$ to K) among the $(K \times M \times N)$ photodiodes $PD_{k,m,n}$ and each successively inputting and accumulating the electric charges generated at the K photodiodes $PD_{k,m,n}$ ($k=1$ to K) and outputting a voltage that is in accordance with the amount of the accumulated electric charges.

(b) The photodetector also includes:

$(M \times N)$ A/D converting circuits, each A/D converting circuit being provided in correspondence to one of said $(M \times N)$ integrating circuits, and outputting a digital value according to the voltage outputted from the corresponding integrating circuit.

(c) In the photodetector,

the $(K \times M \times N)$ photodiodes $PD_{k,m,n}$ are arranged in M rows and $(K \times N)$ columns either two-dimensionally (when $M = 2$) or one-dimensionally (when $M = 1$), with each photodiode $PD_{k,m,n}$ being positioned at the position of the m -th row and $(n + (k-1)N)$ -th column.

Applicants respectfully submit that due to the above-discussed characteristics (a) and (b), the operation from the charge accumulation in the integrating circuit $20m,n$ to the A/D conversion in the A/D converting circuit $50 m,n$ is performed at intervals of the time $(N \times T)$. As a result, the photodetector is advantageously able to suppress an increase in the power consumption of the A/D converting circuit 50m,n, while maintaining a fast photodetection operation. This is based on a description at paragraph [0038] of the specification with regard to Fig. 2 of the instant application.

Also, Applicants respectfully submit that due to the above-discussed characteristic (c), the processes (electric charge accumulation, CDS, filtering, and A/D conversion) regarding photodiodes $PD_{k,m,n}$ are carried out in the order of alignment in each column for each row, and the storage and image processing of the photodetection data obtained by the photodetector 1 are advantageously facilitated. This is based on a description at paragraph [0040] of the specification with regard to Fig. 2 of the instant application.

Applicants respectfully submit that none of the cited references discloses, or even suggests, at least the above-discussed characteristics (a) to (c) as described in newly-amended independent claim 1 of the instant application.

In particular, in Mizuno, Applicants respectfully submit that one integrating circuit is provided for each row (vertical photodetective section (11)). On the other hand, in the instant application, N (N is an integer of no less than 2) integrating circuits are provided for each row,

each row comprises (K x N) photodiodes. So, Applicants respectfully submit that the invention described in the instant application is particularly different from the disclosure of Mizuno for at least the foregoing reasons.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. § 102(b) should be withdrawn because Mizuno does not teach or suggest each feature of newly-amended independent claim 1 of the instant application. As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." Thus, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. Of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987)."

Furthermore, Applicants respectfully submit that the dependent claim 2 is allowable at least because of its dependence from newly-amended independent claim 1, and the reasons discussed previously.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response; the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including

any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573.

This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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